

Amendments to the Claims:

1. (Currently Amended) A superabsorbent polymer composition comprising a superabsorbent polymer ~~comprising~~ consisting essentially of:

a) from about 55 to about 99.9 wt.% of polymerizable unsaturated acid group containing monomers;

b) from about 0.001 to about 5.0% by weight of internal crosslinking agent based on the weight of a);

wherein elements a) and b) are polymerized and prepared into superabsorbent polymer particles; wherein the superabsorbent polymer particles further comprise the following surface additives

c) from about 0.001 to about 5.0% by weight of surface crosslinking agent applied to the particle surface based on dry polymer powder weight ;

d) from about 0.01% to about 5 wt.% by weight of a penetration modifier immediately before, during or immediately after the surface crosslinking step based on dry polymer powder weight;

e) from 0 to about 5% by weight of a multivalent metal salt on the particle surface based on dry polymer powder weight;

f) from 0 to 2% by weight of a surfactant on the particle surface based on dry polymer powder weight;

g) from about 0.01 to about 5% by weight of an insoluble, inorganic powder based on dry polymer powder weight ; and

h) from about 0.01 to $[[5]]$ 0.5% by weight of a thermoplastic polymer based on dry polymer powder weight, said thermoplastic polymer having a thermoplastic melt temperature wherein the thermoplastic polymer is applied on and fully encapsulates the particle surface coincident with or followed by a temperature at least about the thermoplastic melt temperature or greater,

wherein the superabsorbent polymer composition has a degree of neutralization of more than about 25%; and having the characteristics of centrifuge retention capacity of about 25g/g or more; a gel bed permeability I of about $500 \times 10^{-9} \text{cm}^2$ or more; or a gel bed permeability II of about $300 \times 10^{-9} \text{cm}^2$ or more.

2. (Currently Amended) The superabsorbent polymer composition according to claim 1 wherein gel bed permeability I is at least about $[54000e^{-0.18x} + 100] \times 10^{-9} \text{cm}^2$ wherein x is the numeric value of the centrifuge retention capacity.

3. (Currently Amended) The superabsorbent polymer composition according to claim 1 wherein gel bed permeability I is at least about $[54000e^{-0.175x} + 100] \times 10^{-9} \text{cm}^2$ wherein x is the numeric value of the centrifuge retention capacity.

4. (Currently Amended) The superabsorbent polymer composition according to claim 1 wherein gel bed permeability I is at least about $[54000e^{-0.17x} + 100] \times 10^{-9} \text{cm}^2$ wherein x is the numeric value of the centrifuge retention capacity.

5. (Currently Amended) The superabsorbent polymer composition according to claim 1 wherein gel bed permeability I is at least about $[54000e^{-0.165x} + 100] \times 10^{-9} \text{cm}^2$ wherein x is the numeric value of the centrifuge retention capacity.

6. (Previously Presented) The superabsorbent polymer composition of claim 1 wherein the thermoplastic polymer is selected from polyethylene, polyesters, polyurethanes, linear low density polyethylene (LLDPE), ethylene acrylic acid copolymer (EAA), styrene copolymers, ethylene alkyl methacrylate copolymer (EMA), polypropylene (PP), ethylene vinyl acetate copolymer (EVA) or blends thereof, or copolymers thereof.

7. (Previously Presented) The superabsorbent polymer composition of claim 1 having a Dust Values of about 4 or less.

8. (Previously Presented) The superabsorbent polymer composition of claim 1 having a gel bed permeability I of about $800 \times 10^{-9} \text{cm}^2$ or more; or a gel bed permeability II of about $500 \times 10^{-9} \text{cm}^2$ or more.

9. (Previously Presented) The superabsorbent polymer composition of claim 1 having a shear modulus of less than about 9500 dynes/cm^2 .

10. (Previously Presented) The superabsorbent polymer composition of claim 1 having a shear modulus from about 4000 dynes/cm^2 to about 8500 dynes/cm^2 .

11. (Currently Amended) The superabsorbent polymer composition comprising a superabsorbent polymer ~~comprising~~ consisting essentially of:

a) from about 55 to about 99.9 wt.% of polymerizable unsaturated acid group containing monomers;

b) from about 0.001 to about 5.0 wt.% based on the weight of a) of internal crosslinking agent;

wherein elements a) and b) are polymerized and prepared into superabsorbent polymer particles; wherein the superabsorbent polymer particles further comprise the following surface additives

c) from about 0.001 to about 5.0% by weight of surface crosslinking agent applied to the particle surface based on dry polymer powder weight;

d) from about 0.01% to about 5 [[wt.]] % by weight of a penetration modifier immediately before, during or immediately after the surface crosslinking step based on dry polymer powder weight;

e) from 0 to about 5% by weight of a multivalent metal salt on the particle surface based on dry polymer powder weight;

f) from 0 to 2% by weight of a surfactant on the particle surface based on dry polymer powder weight;

g) from about 0.01 to about 5% by weight of an insoluble, inorganic powder based on dry polymer powder weight; and

h) from about 0.01 to $[[5]]$ 0.5% by weight of a thermoplastic polymer based on dry polymer powder weight, the thermoplastic polymer having a thermoplastic melt temperature wherein the thermoplastic polymer is applied on and fully encapsulates the particle surface coincident with or followed by a temperature at least about the thermoplastic melt temperature or greater,

wherein the composition has a degree of neutralization of more than about 25%; having the characteristics of centrifuge retention capacity of about 25g/g or more; a gel bed permeability I of about $200 \times 10^{-9} \text{cm}^2$ or more; or a gel bed permeability II of about $150 \times 10^{-9} \text{cm}^2$ or more.

12. (Currently Amended) The superabsorbent polymer composition according to claim $[[8]]$ 11 wherein gel bed permeability I is at least about $[54000e^{-0.18x} + 100] \times 10^{-9} \text{cm}^2$ wherein x is the numeric value of the centrifuge retention capacity.

13. (Currently Amended) The superabsorbent polymer composition according to claim $[[8]]$ 11 wherein gel bed permeability I is at least about $[54000e^{-0.175x} + 100] \times 10^{-9} \text{cm}^2$ wherein x is the numeric value of the centrifuge retention capacity.

14. (Currently Amended) The superabsorbent polymer composition according to claim $[[8]]$ 11 wherein gel bed permeability I is at least about $[54000e^{-0.17x} + 100] \times 10^{-9} \text{cm}^2$ wherein x is the numeric value of the centrifuge retention capacity.

15. (Currently Amended) The superabsorbent polymer composition according to claim [[8]] 11 wherein gel bed permeability I is at least about $[54000e^{-0.165x} + 100] \times 10^{-9} \text{cm}^2$ wherein x is the numeric value of the centrifuge retention capacity.

16. (Currently Amended) The superabsorbent polymer composition of claim [[8]] 11 wherein the thermoplastic polymer is selected from polyethylene, polyesters, polyurethanes, linear low density polyethylene (LLDPE), ethylene acrylic acid copolymer (EAA), styrene copolymers, ethylene alkyl methacrylate copolymer (EMA), polypropylene (PP), ethylene vinyl acetate copolymer (EVA) or blends thereof, or copolymers thereof.

17. (Currently Amended) The superabsorbent polymer composition of claim [[8]] 11 having a Dust Values of about 4 or less.

18. (Currently Amended) The superabsorbent polymer composition of claim [[10]] 11 having a shear modulus of less than about 9500 dynes/cm².

19. (Currently Amended) The superabsorbent polymer composition of claim [[10]] 11 having a shear modulus from about 4000 dynes/cm² to about 8500 dynes/cm².

20. (Previously Presented) The superabsorbent polymer composition according to claim 1 comprising from about 0.1 to about 5 % by weight of a multivalent metal salt based on the dry polymer powder weight.

21. (Previously Presented) The superabsorbent polymer composition of claim 1 wherein the insoluble, inorganic powder is silica.

22. (Previously Presented) The superabsorbent polymer composition of claim 11 wherein the insoluble, inorganic powder is silica.

23. (Previously Presented) The superabsorbent polymer composition of claim 11 comprising from about 0.01 to 5% by weight of a thermoplastic polymer based on dry polymer weight, the thermoplastic polymer having a thermoplastic melt temperature wherein the thermoplastic polymer is applied on the superabsorbent polymer particle surface coincident with or followed by a temperature of the coated superabsorbent polymer particle of at least about the thermoplastic melt temperature or greater.

24. (Currently Amended) A method to make a superabsorbent polymer composition comprising the steps of:

- a) preparing a superabsorbent polymer by the process of polymerizing from about 55 to about 99.9 % weight of polymerizable unsaturated acid group containing monomers, and from about 0.001 to about 5 % weight of internal crosslinking agent based on the polymerizable unsaturated acid group containing monomers, and a neutralization such that the superabsorbent polymer has a degree of neutralization of more than about 25%;
- b) preparing superabsorbent polymer particles from the superabsorbent polymer;
- c) treating the superabsorbent polymer particles with surface additives including

i) from about 0.001 to about 5.0 % weight of a surface crosslinking agent based on dry polymer powder weight;

ii) from about 0.01 to about 10 % weight of a penetration modifier based on dry polymer powder weight;

iii) from about 0.01 to about 5 % weight of a multivalent metal salt based on dry polymer powder weight;

iv) from 0 to 2 % weight of a surfactant based on dry polymer powder weight;

v) from about 0.01 to about 5 % weight of an insoluble, inorganic powder based on dry polymer powder weight; and

vi) from about 0.01 to ~~[[5]]~~ 0.5 % weight of a thermoplastic polymer based on dry polymer powder weight is applied on and fully encapsulates the particle surface, heat treating the coated superabsorbent polymer particle; wherein the superabsorbent polymer composition has the characteristics of centrifuge retention capacity of about 25g/g or more; a gel bed permeability I of about $500 \times 10^{-9} \text{cm}^2$ or more; or a gel bed permeability II of about $300 \times 10^{-9} \text{cm}^2$ or more.

25. (Previously Presented) The method of claim 24 wherein in step a) at least about 50 % weight of the acid groups include carboxyl groups, the acid groups are neutralized to at least 59 mole %, and the internal crosslinking agent is from about 1.0 to about 3.0 % weight based on the total amount of the polymerizable unsaturated acid group containing monomers.

26. (Previously Presented) The method of claim 24 wherein the heat treatment of the coated superabsorbent polymer is from about 100°C to about 300°C.

27. (Previously Presented) The method of claim 24 wherein the heat treatment of the coated superabsorbent polymer is from about 150°C to about 250°C.

28. (Currently Amended) The method of claim 24 wherein the superabsorbent polymer composition has a gel bed permeability I of at least about $[54000e^{-0.18x} + 100] \times 10^{-9} \text{cm}^2$ wherein x is the numeric value of the centrifuge retention capacity.

29. (Previously Presented) The method of claim 24 wherein the superabsorbent polymer composition has a gel bed permeability II of about $500 \times 10^{-9} \text{cm}^2$ or more.

30. (Previously Presented) The method of claim 24 wherein the superabsorbent polymer composition has a Dust Values of about 4 or less.

31. (Previously Presented) The method of claim 24 wherein the superabsorbent polymer composition has a shear modulus of less than about 9500 dynes/cm^2 .

32. (Previously Presented) The method of claim 24 wherein the insoluble, inorganic powder is silica.

33. (New) The superabsorbent polymer composition of claim 1 having from about 0.01 to about 0.1% by weight of a thermoplastic polymer based on dry polymer powder weight.

34. (New) The superabsorbent polymer composition of claim 11 having from about 0.01 to about 0.1% by weight of a thermoplastic polymer based on dry polymer powder weight.

35. (New) The method of claim 24 having from about 0.01 to about 0.1% by weight of a thermoplastic polymer based on dry polymer powder weight.